

# Civilian IT Workforce Skills Assessment Part II

By Sandra J. Smith

## Assessing the IT Civilian Workforce of Today

This article provides key findings, conclusions and recommendations derived from an analysis of the federal information technology workforce skills assessment survey, which was conducted in September 2003.

The previous information technology (IT) workforce article, which appeared in *CHIPS Winter 2004*, ([http://www.chips.navy.mil/archives/04\\_winter/Web\\_Pages/workforce.htm](http://www.chips.navy.mil/archives/04_winter/Web_Pages/workforce.htm)) provided a profile of the average civilian IT worker based on demographics, with an overview of the average IT worker's technical and general competencies, skills, certification areas and job activities. The following are some of the key findings.

## Key Demographic Findings

Based on the profile of the DON average civilian worker provided in Figure 1, the IT workforce is aging, and there is a small percentage of younger IT workers to replace those who will be leaving the workforce within the next 10 to 20 years.

Profile of the Average IT Worker
... is between 46 and 50 years of age
... is a GS-12
... has little or no private sector experience
... is likely to retire in the next 10 to 20 years
... is fairly mobile
... holds a bachelor's degree
... has over 20 years of federal government experience

Figure 1.

Transferring knowledge from experienced workers to younger workers will be an increasingly critical requirement for the long term, but ensuring the existing workforce has current and relevant competencies is the higher priority for the near term. Attracting younger IT workers and ensuring

the existing workforce has relevant competencies are both difficult in a resource-constrained environment in which many organizations face ongoing restructuring and downsizing. Workforce planning is critical to developing executable strategies to address these challenges.

Another interesting finding is that survey respondents indicate that they have very little private sector IT experience. This finding supports the need to take advantage of the IT Exchange Program that is one of the provisions contained in the E-Government Act of 2002. This law authorizes the temporary assignment of federal employees in the field of IT management to exchange jobs with private sector organizations.

There is a fair amount of mobility within the IT workforce, based on respondents who indicated that they may leave the organization in the next three years. This could mean that the workforce does not perceive barriers to changing positions. Certain levels of turnover within the workforce are expected — but too much would further exacerbate the challenges of ensuring a capable workforce.

Finally, across the DON, there is no single grade level that will bear the impact of retirement more than others, though for the near term, GS-15 and Senior Executive Service grades will lose the most employees due to retirement. This finding is expected since grade and tenure are usually related.

## Key Competency, Skill and Certification Findings

The survey asked respondents to provide a self-assessment of their current proficiency in general and technical competencies, specific IT-related skills and certifications. Based on the responses, we found that competency proficiency in the DON is generally higher than skill proficiency. This

could mean several things: (1) The workforce is equipped to handle complex jobs/activities without the need to understand the details of how a particular technology works; (2) The work is less task-oriented, so skills may not be as central to the job as competencies; (3) The workforce has not been given the opportunity (through training, certification, etc.) to stay abreast of skills related to rapidly changing technologies; or (4) These may be functions that are outsourced.

The Workforce team will be following up to determine what these findings mean.

Respondents rated their proficiency in general competencies somewhat higher than technical competencies. Among the top 10 general competencies, Leadership (see Figure 2) is a main driver for employee satisfaction as identified in the 2004 Best Places to Work in the Federal Government (available at [www.feddesk.com](http://www.feddesk.com)).

Best Places to Work Top Drivers
Effective Leadership
Alignment of Mission to Employee Talents
Teamwork and Collaboration
Source: 2004 Best Places to Work in the Federal Government

Figure 2.

In terms of IT skills, many of those in which the workforce indicated that they were most proficient are ones considered basic or universal skills, such as using e-mail and Internet browsers. Conversely, many of the lower-rated skills are highly specialized, including portal development and biometrics.

In general, few IT workers indicate they have certifications related to their job areas. Less than 5 percent of respondents indicate that they have certifications in 42 of the 44 areas included in the survey. The areas in which there are relatively higher percentages of individuals with certifications are Information Systems Security and Network Security.

This is encouraging given its emphasis and direct linkage to the DON mission. Information Assurance competencies appear relatively high, and there are noticeable trends that as workers spend more time in IA activities, the higher their proficiency in related competencies.

Figure 3 shows the proficiency levels (none, basic, intermediate and advanced) for IA competencies along the horizontal x axis; and the amount of time spent (extensive, moderate or minimal) in this activity along the vertical y axis.

Another finding relates to the Chief Information Officer certification. When examining the 404 DON respondents at the GS-13 grade level and above, 4.2 percent (17) reported they had CIO certificates. Further assessment is needed to determine if DON employees are taking advantage of the CIO Certificate Program through the Information Resources Management College.

### Specialized Job Findings

When comparing competencies, skills and certifications to the specialized job activities they are related to, it appears that DON IT workers' competency proficiencies are adequate and may not require a concerted effort at further development.

Generally, competency proficiency is appropriately matched to time spent on specialized job activities; for example, those who spend an extensive amount of time on a specialized job activity have "advanced" or "expert" level proficiency in the related competencies, while those who have "intermediate" or lower proficiency only perform the activity on a limited basis.

However, skill proficiencies tend to be more of a mixed result, with some skills indicating a lower than desired proficiency level. The numbers and percentages of individuals certified in an area where they spend an extensive amount of time are generally low across the board.

The workforce assessment summary, as shown in Figure 4, illustrates that competencies are generally strong; however, it also highlights the need for development in Capital Planning and Investment. Skill development in Information Assurance had mixed results. Currently, IA training, education and certification requirements are being addressed through ongoing efforts within the Department of Defense and DON.

### Next Steps

The DON CIO Human Capital Management Model (HCM) includes five major components illustrated in Figure 5. The

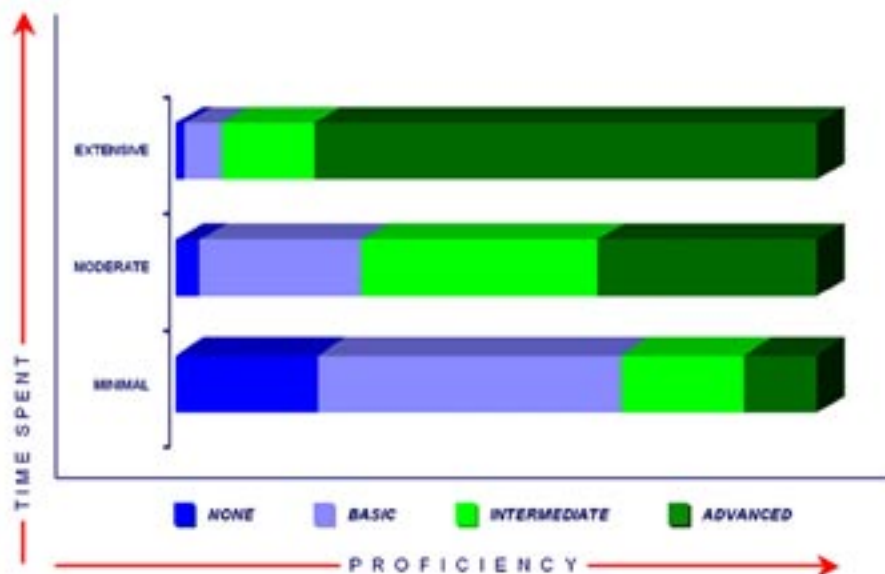


Figure 3. Time Spent Relative to Proficiency Level in Information Assurance

ACTIVITY NAME	COMPETENCIES	SKILLS	CERTS	RANK
IT PROJECT MGMT	ADEQUATE	MAY NEED WORK	9% FOR EXTENSIVE	1
IT SECURITY/IA	STRONG	MIXED RESULTS	9% FOR EXTENSIVE	2
IT WORKFORCE DEVELOPMENT/MGMT	STRONG	ADEQUATE	N/A	3
KNOWLEDGE MGMT	STRONG	MAY NEED WORK	N/A	4
RECORDS MGMT	STRONG	STRONG	7% FOR EXTENSIVE	5
SOLUTIONS ARCH	STRONG	MIXED RESULTS	2% FOR EXTENSIVE	7
PRIVACY	STRONG	MAY NEED WORK	10% FOR EXTENSIVE	6
ENTERPRISE ARCH	STRONG	MIXED RESULTS	N/A	8
CAPITAL PLANNING AND INVESTMENT	STRONG	CRITICAL DEVELOPMENT NEED	N/A	9
eGOVERNMENT	STRONG	MIXED RESULTS	10% FOR EXTENSIVE	10

Figure 4. Specialized Job Activities Assessment Summary

survey supports the third component — Workforce Assessment. The next building block is Workforce Planning. While trends and initiatives can be identified at the DON level to address broad deficiencies, the greatest value of HCM is realized at the organizational level — where individual development can be assessed against specific mission requirements.

The survey results will be incorporated into the DON Information Management/Information Technology (IM/IT) workforce strategic human capital strategy as a critical baseline and a means for measuring change over time against future assess-

ments. Additionally, the survey data will be made available to Navy and Marine Corps organizations whose personnel participated in the survey so they can perform a more in-depth comparative analysis and develop strategies to mitigate identified competency and skill gaps to meet their specific workforce planning needs.

The DON IM/IT Workforce team will further analyze the survey results, focusing on DON specific requirements in competencies, skills and certifications to develop enterprise level interventions. The use of partnerships and industry exchange programs, such as the Federal IT Exchange

## HUMAN CAPITAL MANAGEMENT COMPONENTS



Figure 5.

Program, which is currently under review at the Office of Personnel Management, are examples of approaches that could be valuable interventions or professional development opportunities.

### Enabling an Extraordinary Workforce

The survey validates some of the assumptions and conclusions from prior DON CIO enterprise-level workforce planning efforts, particularly the 1999 DON IM/IT workforce gap analyses. The results reflect the ability of the DON IT workforce to manage complex jobs and activities without the need to understand underlying technology. Work is less task-oriented so skills are less important than competencies. However, the assessment does highlight the need to develop and retrain current workers, and it shows there is not a critical concern that the workforce will retire en masse in the near future.

There are several resources that are available for further career development. A few of them are listed below.

- The Federal IT Roadmap is a career planning application for IT professionals in the GS-2210 occupational series and is accessible at <http://itroadmap.golearn.gov>.
- The DON Civilian Career Path Guide for Management of Technology, Information, and Knowledge and the Career Planning Tool are job role-based career development resources for those in the Information Management, Knowledge Management, Computer and Information Systems Engineering, Information As-

surance and Telecommunications areas. These tools are accessible from the DON CIO Web site <http://www.doncio.navy.mil> under the Products tab.

- The DON IM/IT Workforce Virtual Workplace is available for collaboration and information sharing (you may request membership through the DON CIO Web site).
- The Information Assurance Scholarship Program provides scholarships for master's and doctoral degrees in IA-related fields. Nominations are accepted each year from DON civilian and military employees (more information is available on the DON CIO Web site).
- The Chief Information Officer (CIO) Certificate Program is DoD-sponsored graduate education for federal CIO competencies and is available through the Information Resources Management College, the recognized education resource for DoD information resource managers. The IRMC offers other certificate programs including Information Assurance and eGovernment Leadership. Go to <http://www.ndu.edu/irmc> for more information.

An organization's primary competitive advantage is its people — "Hiring and retaining skilled professionals" is the No. 2 rated challenge for IT organizations cited in the Federal CIO Eighth Annual Top Ten Challenges Survey, Association for Federal Information Resources Management, November 2003. The September 2003 assessment provides a snapshot in time that will be used to assist in developing enterprise

### Taking A Closer Look



The Capital Planning and Investment Activity in Figure 4 has four competencies, one skill, and no associated certifications. Federal/OMB Enterprise Architecture is the skill associated with the Capital Planning and Investment Activity, and this skill was rated as a deficiency across the federal government. DON IT workers ranked it 77 out of 80 surveyed skills. Enterprise Architecture provides a broad view of the entire organization and was identified as a requirement for Capital Planning and Investment.

Since assessments reflect work that is currently done — not work that should be done — the assessment reinforces the need for not only skill development but also awareness.

In today's eGovernment environment, applying enterprise architecture skills as an enabler of Capital Planning and Investment should not be limited to just the DoD or DON architecture view, but should be broadened to include the Federal Enterprise Architecture as well.

strategies to support the DON IM/IT Strategic Plan goal to "Shape the IM/IT workforce of the future."

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*Editor's Note: Go to page 20 for more information about the Information Resources Management College.*

